OIPE JC16
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PATENT & TRADEMARK OFFICE

MEDICAL DEVICE WITH POSITION SENSOR HAVING ACCURACY AT HIGH TEMPERATURES
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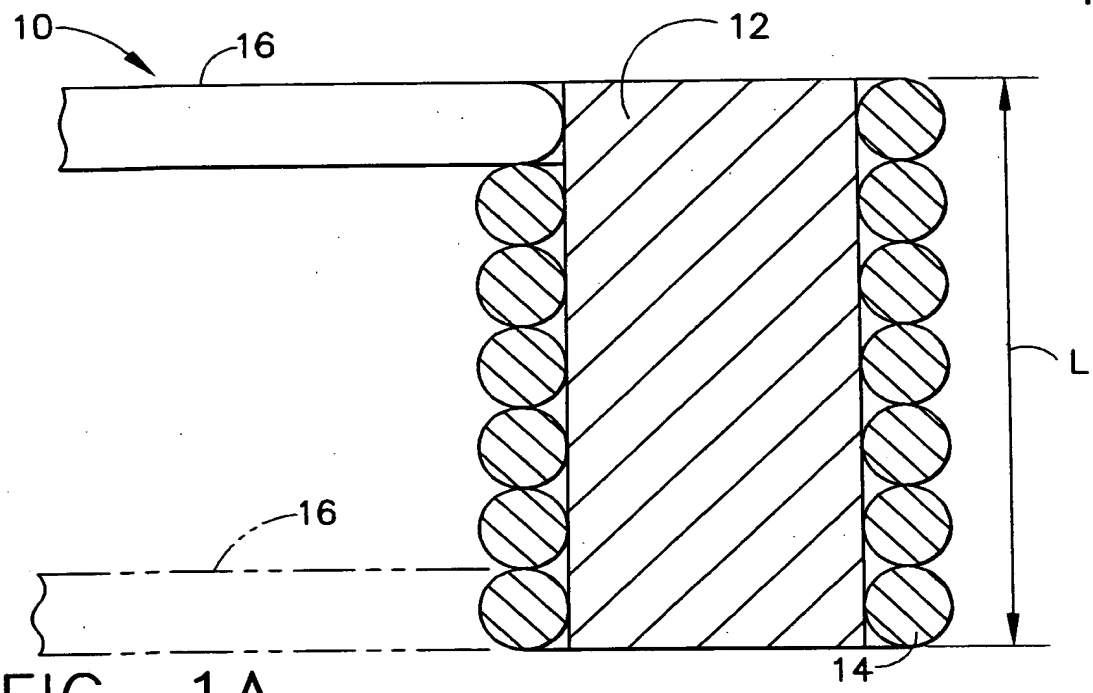

FIG. 1A

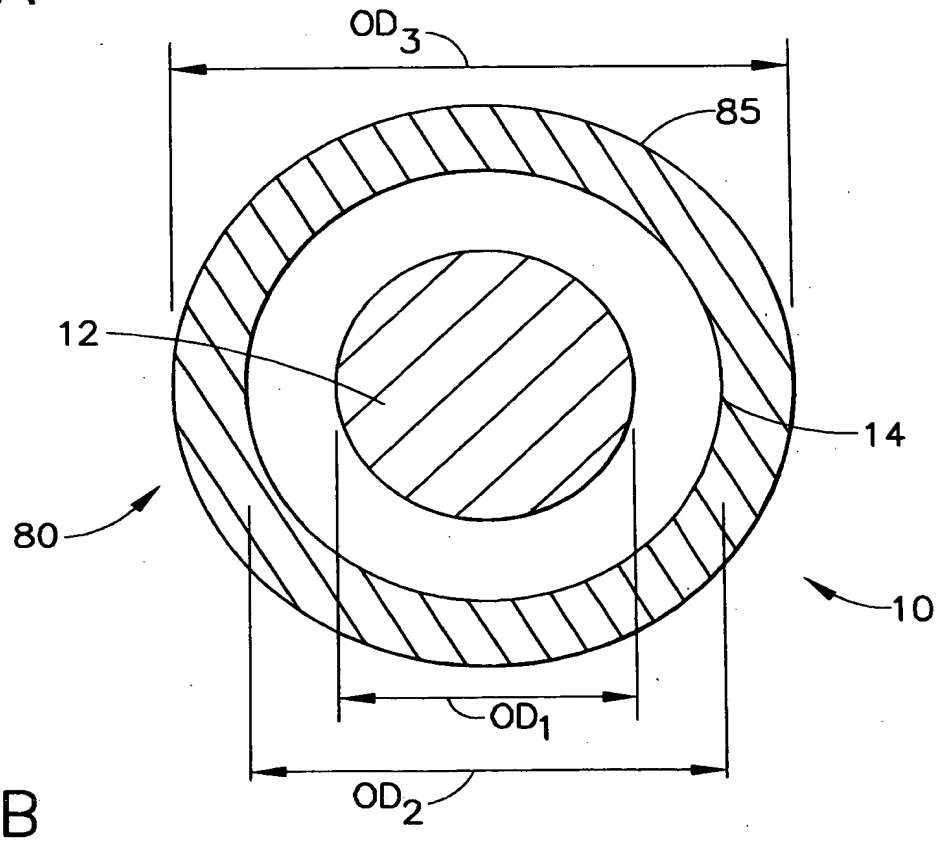

FIG. 1B

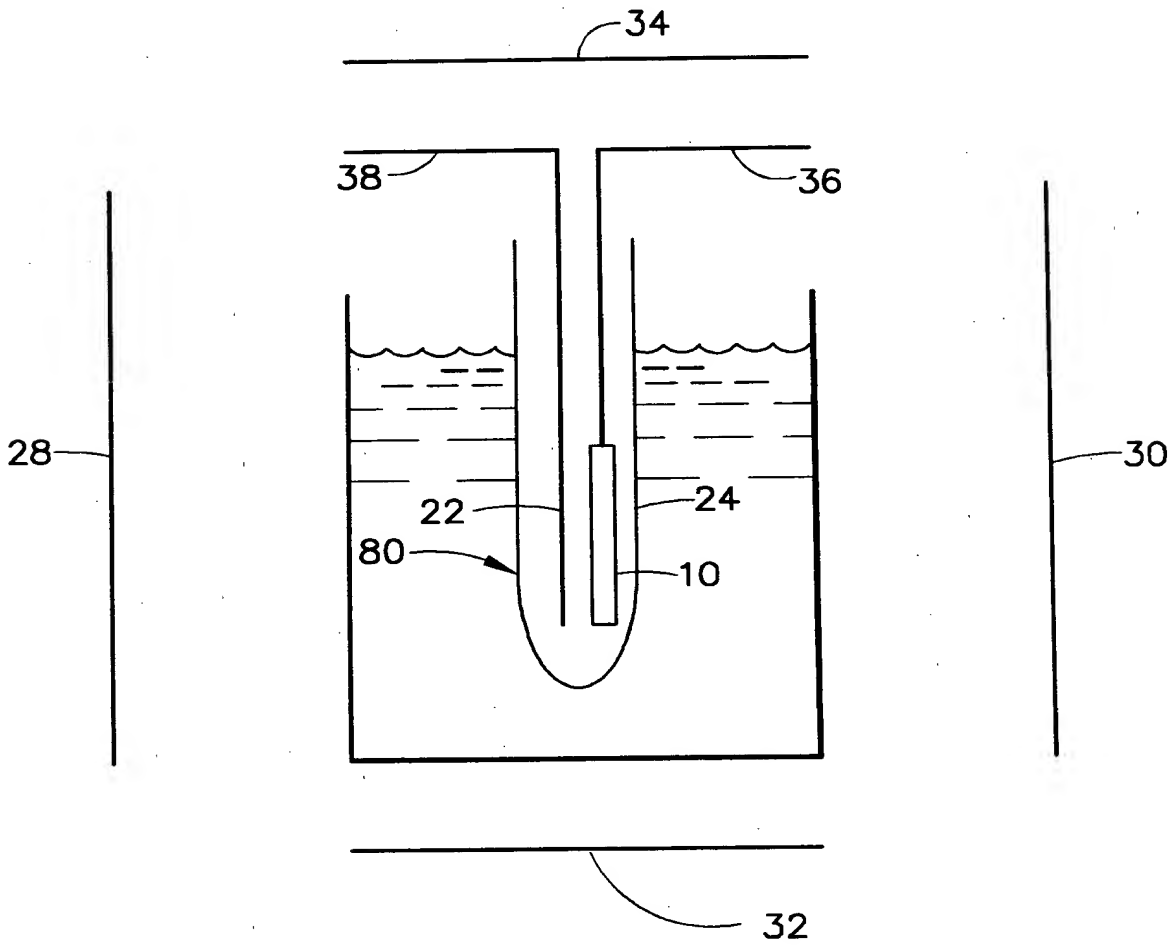

FIG. 2

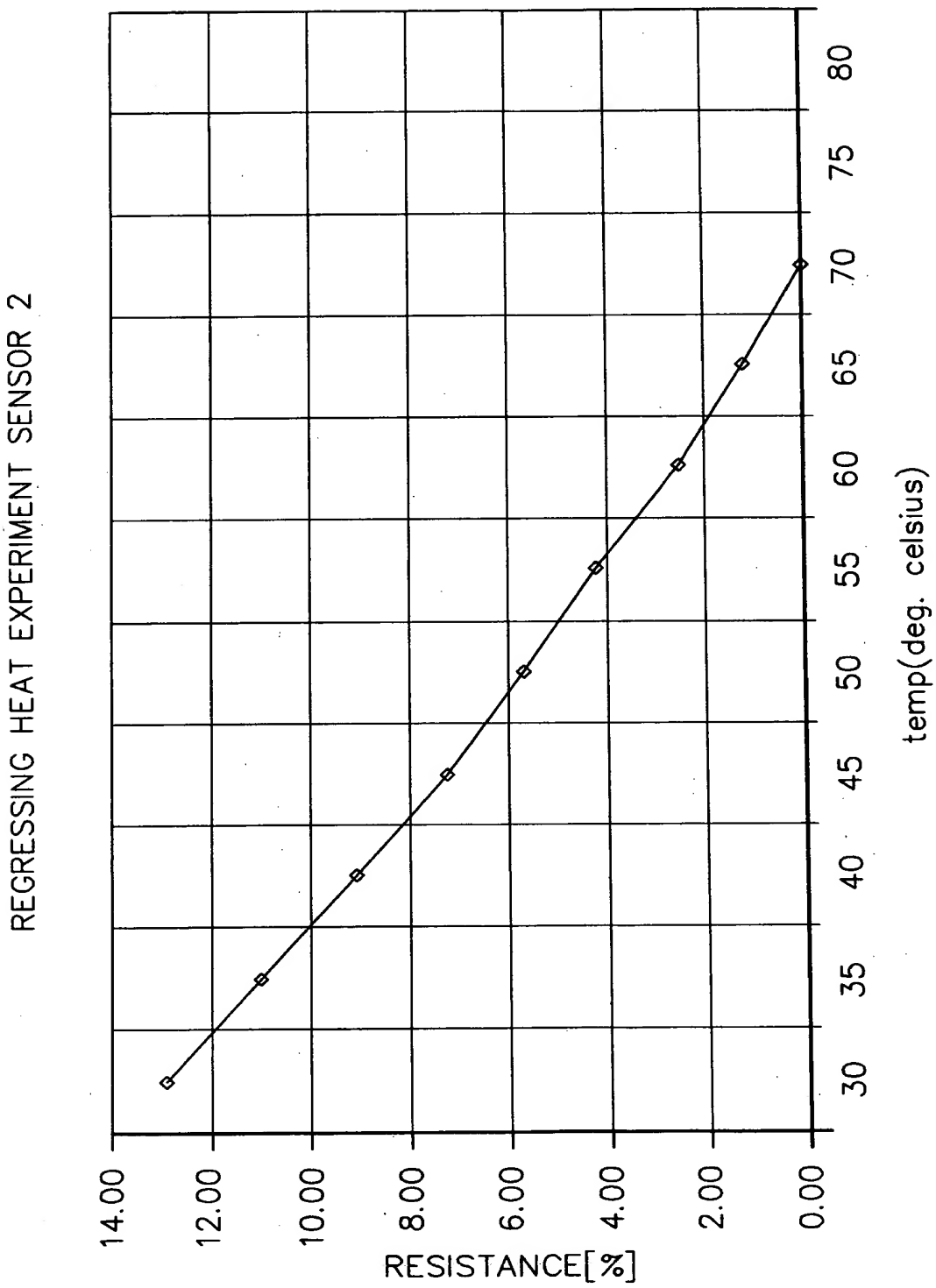
REGRESSING HEAT EXPERIMENT SENSOR 2
RESISTANCE[%]
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
temp(deg. celsius)
30
35
40
45
50
55
60
65
70
75
80

FIG. 3A

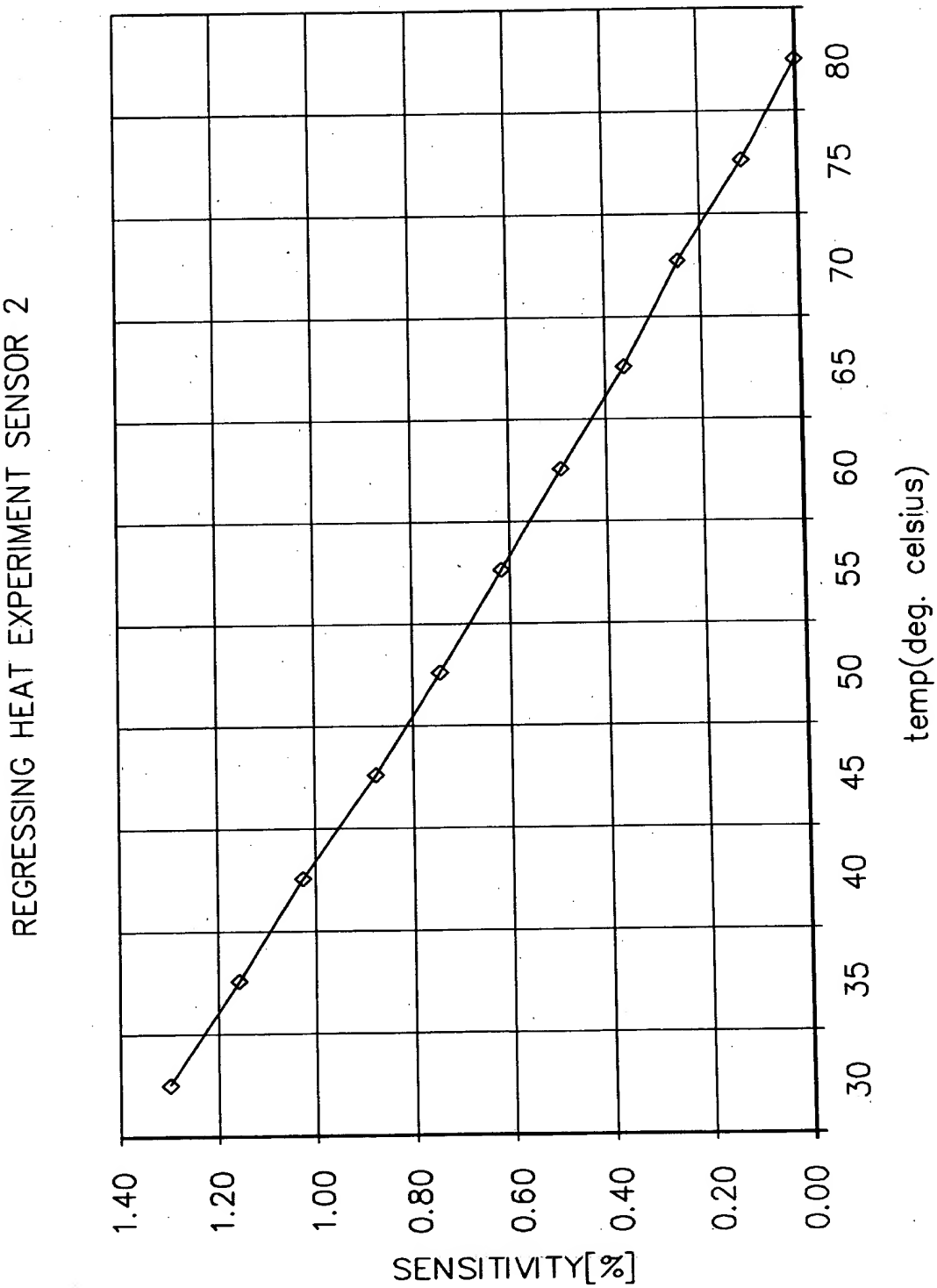
REGRESSING HEAT EXPERIMENT SENSOR 2
temp(deg. celsius)
30
35
40
45
50
55
60
65
70
75
80
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
SENSITIVITY[%]

FIG. 3B

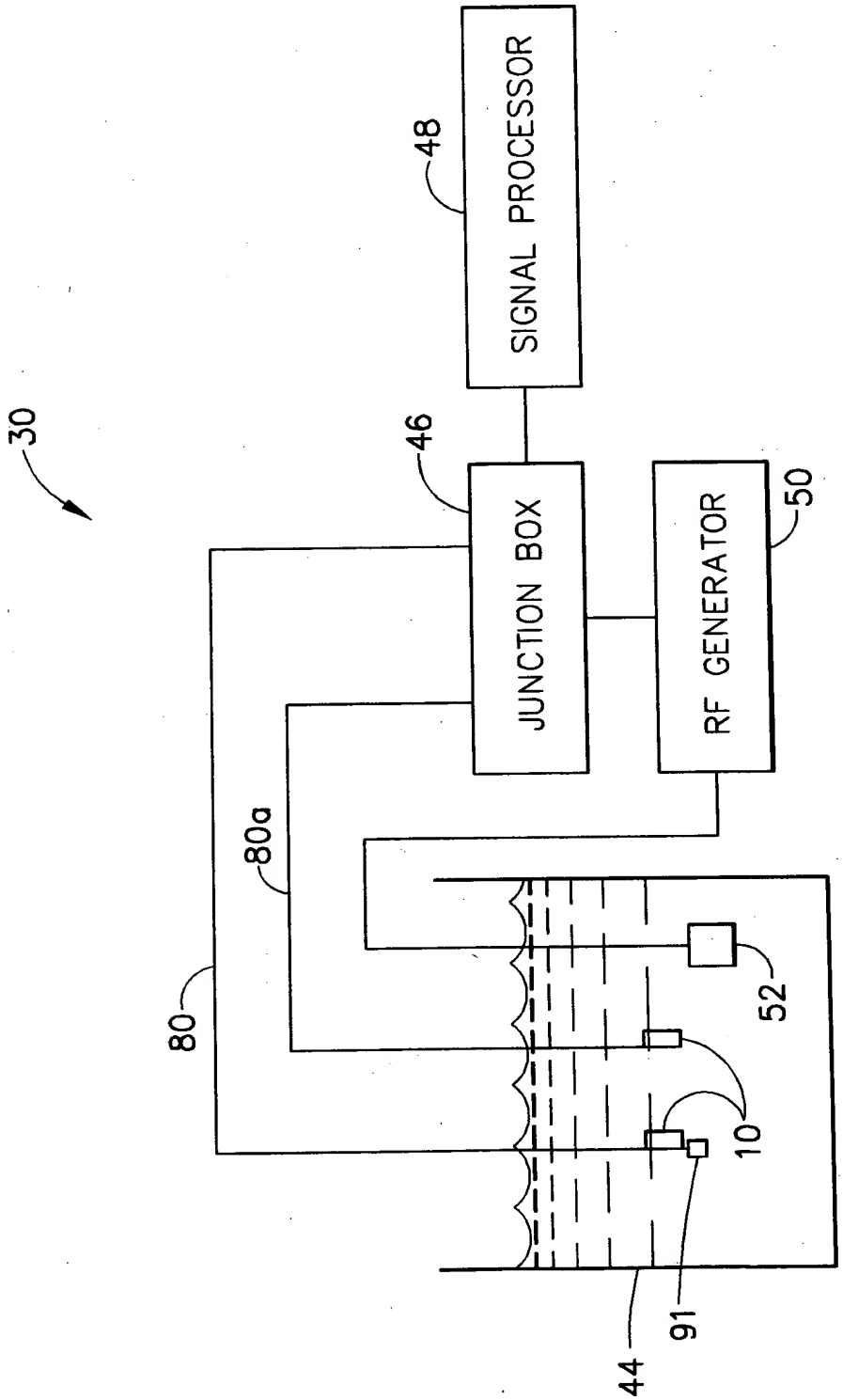
30
SIGNAL PROCESSOR
48
46
JUNCTION BOX
RF GENERATOR
50
80a
80
52
10
91
44

FIG. 4

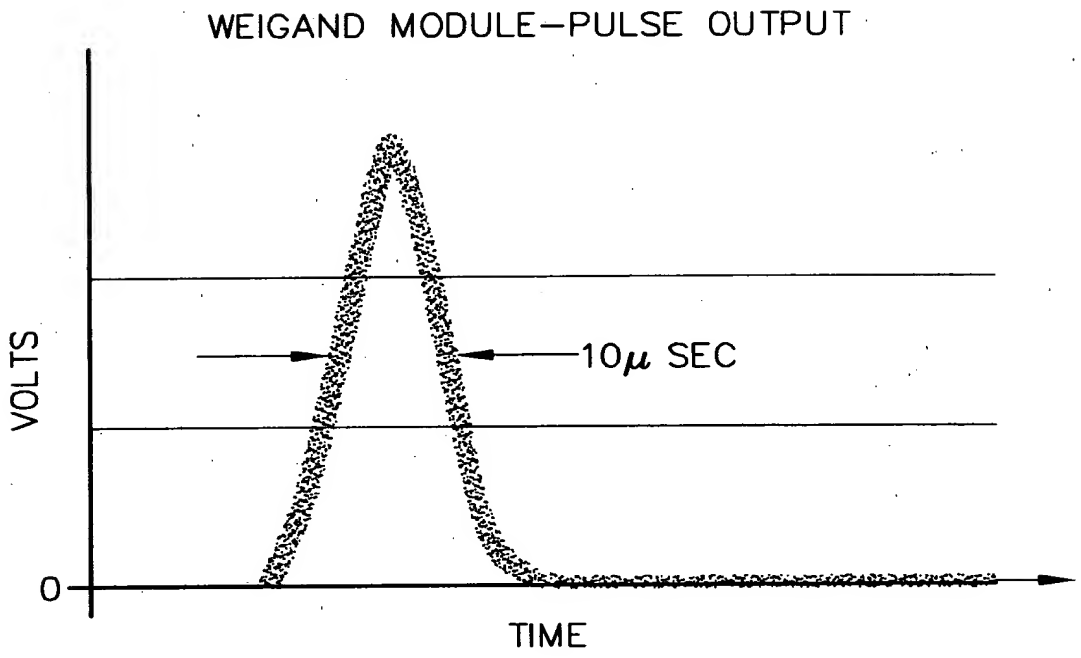

FIG. 5

REGRESSING HEAT EXPERIMENT

	1				2				3				4			
	sensitivity		resistance		sensitivity		resistance		sensitivity		resistance		sensitivity		resistance	
30	2.6290	1.39	176.30	12.59	2.3925	1.30	165.20	12.89	2.4537	1.31	171.80	13.17	2.6864	1.26	185.60	13.25
35	2.6327	1.25	178.90	10.96	2.3958	1.18	168.00	11.01	2.4567	1.18	174.30	11.42	2.6896	1.14	188.90	11.28
40	2.6356	1.13	181.80	9.19	2.3990	1.03	171.00	9.06	2.4598	1.06	177.20	9.50	2.8728	1.03	192.10	9.42
45	2.6390	1.00	184.40	7.65	2.4025	0.86	173.90	7.25	2.4632	0.92	179.90	7.95	2.8765	0.90	194.90	7.85
50	2.6419	0.89	187.40	5.92	2.4057	0.74	176.40	5.73	2.4670	0.76	182.80	6.95	2.8801	0.77	197.80	6.27
55	2.6457	0.75	190.40	4.25	2.4087	0.62	178.90	4.25	2.4705	0.62	185.30	4.80	2.8838	0.64	200.80	4.58
60	2.6489	0.63	192.80	2.96	2.4116	0.50	181.80	2.59	2.4744	0.45	188.20	3.19	2.8875	0.52	203.80	3.14
65	2.6519	0.51	195.80	1.38	2.4148	0.36	184.30	1.19	2.4774	0.34	191.80	1.25	2.8913	0.38	207.30	1.40
70	2.6567	0.37	198.50	0.00	2.4176	0.25	186.50	0.00	2.4799	0.24	194.20	0.00	2.8952	0.25	210.20	0.00
75	2.6599	0.21			2.4207	0.12			2.4833	0.10	196.40		2.8986	0.13	212.20	
80	2.6555	0.00			2.4236	0.00			2.4859	0.00			2.9024	0.00		
slope	-0.0266		-0.3165		-.0250		-0.3233		-0.0289		-0.3305		-0.0254		-0.3279	

	5				6				7				8			
	sensitivity		resistance		sensitivity		resistance		sensitivity		resistance		sensitivity		resistance	
30	3.3480	1.00	235.7	12.16	2.4057	1.25	167.4	13.02	2.4290	1.32	160.32	20.27	2.5002	1.11	175.40	11.74
35	3.3506	0.92	239.3	10.49	2.4061	1.15	169.6	11.56	2.4319	1.20	161.70	19.23	2.5029	1.00	177.40	10.48
40	3.3533	0.84	242.8	8.90	2.4108	1.04	171.9	10.06	2.4356	1.05	166.30	15.94	2.5053	0.91	179.20	9.38
45	3.3568	0.74	246.7	7.17	2.4141	0.90	174.7	8.30	2.4387	0.92	171.00	12.75	2.5070	0.84	180.60	8.53
50	3.3605	0.62	250.9	5.38	2.4157	0.79	177.3	6.71	2.4428	0.75	172.90	11.51	2.5093	0.75	183.50	6.81
55	3.3642	0.51	254.4	3.93	2.4196	0.66	179.6	5.35	2.4452	0.61	174.10	10.74	2.5134	0.58	185.10	5.89
60	3.3674	0.42	258.7	2.20	2.4232	0.52	182.2	3.84	2.4494	0.48	183.90	4.84	2.5157	0.49	191.40	2.40
65	3.3708	0.32	261.7	1.03	2.4265	0.38	184.6	2.49	2.4516	0.39	190.20	1.37	2.5168	0.45	194.10	0.98
70	3.3749	0.20	264.4	0.00	2.4293	0.27	186.9	1.23	2.4546	0.25	192.80	0.00	2.5215	0.26	196.00	0.00
75	3.3780	0.10	267.9		2.4326	0.13	189.2	0.00	2.4580	0.13			2.5247	0.13		
80	3.3815	0.00			2.4358	0.00			2.4511	0.00			2.5280	0.00		
slope	-0.205		-0.3124		-0.0253		-0.2934		-0.0266		-0.5271		-0.0219		-0.3069	

FIG. 6